

Core Flight System (CFS) Integrated Development Environment

Completed Technology Project (2014 - 2015)



Project Introduction

The purpose of this project is to create an Integrated Development Environment (IDE) for the Core Flight System (CFS) software to reduce the time it takes to configure, develop, test, and deploy flight software for a given mission or project.

In order to reduce the time, cost and schedule related to the development of flight software, the Flight Software Systems Branch at Goddard Space Flight Center (GSFC) has developed a component based reuse process to address and enhance our ability to develop, test and deploy data system flight software.

This process and software architecture, called the Core Flight System (CFS), is based on three major components, a small runtime core Flight Executive (cFE), an expandable catalog/library of reusable Core Flight Software (CFS) components, and an Integrated Development Environment (IDE). The CFS is designed to allow components to be selected, configured, and deployed for running systems. While the CFS has been successful at reducing the development time and cost of typical Goddard missions, there is still a greater level of efficiency that can be achieved by completing the third component, the Integrated Development Environment (IDE).

The IDE will provide a set of tools and interfaces for mission engineers to select and configure CFS components (from the reuse library) and deploy the system.

Anticipated Benefits

The CFS IDE will enhance our ability to develop, test, and deploy flight software through a common set of tools and interfaces. This will reduce the number of mission engineers required to select, configure and the build the application environment required to deploy the flight system.



CFS IDE

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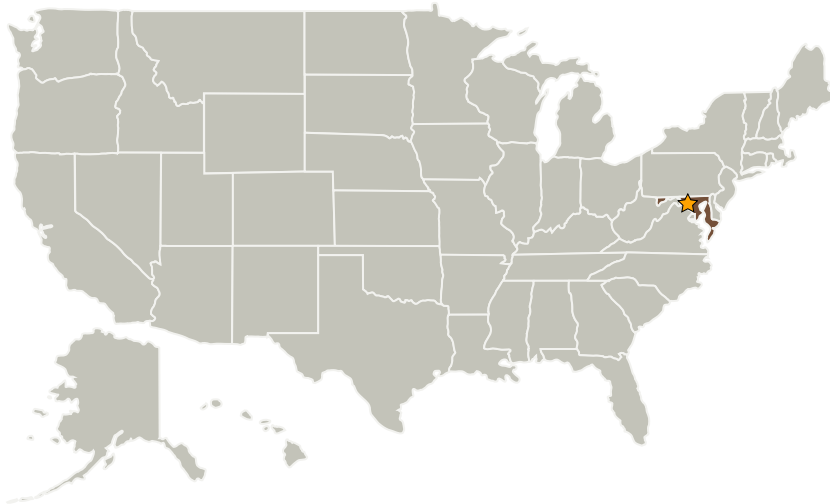
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Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations

Maryland

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Manager:

Jacqueline J Le Moigne-stewart

Principal Investigator:

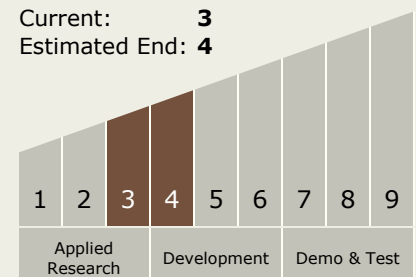
Dwayne S Molock

Technology Maturity (TRL)

Start: 3

Current: 3

Estimated End: 4





Images



CFS IDE Plugin Logo

CFS IDE

(<https://techport.nasa.gov/image/4202>)

Project Website:

<http://aetd.gsfc.nasa.gov>

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.1 Software Development, Engineering, and Integrity
 - └ TX11.1.3 Test and Evaluation